

We claim:

1. A method of sensitizing a neoplastic cell to a chemotherapeutic agent,
comprising:
 - 5 (a) administering to said neoplastic cell an effective amount of a reovirus;
and
 - (b) administering an effective amount of the chemotherapeutic agent to said
cell.
- 10 2. The method of claim 1 wherein the reovirus is administered prior to the
administration of the chemotherapeutic agent.
- 15 3. The method of claim 1 wherein the reovirus is administered concurrently with
the chemotherapeutic agent.
4. The method of claim 1 wherein the neoplastic cell is located in a mammal.
- 20 5. The method of claim 1 wherein the mammal is selected from the group selected
from the group consisting of dogs, cats, sheep, goats, cattle, horses, pigs,
humans and non-human primates.
- 25 6. The method of claim 1 wherein the chemotherapeutic agent is selected from the
group consisting of 5-fluorouracil, mitomycin C, methotrexate, hydroxyurea,
cyclophosphamide, dacarbazine, mitoxantrone, anthracyclins, carboplatin,
cisplatin, taxol, taxotere, tamoxifen, anti-estrogens, and interferons.
7. The method of claim 1 wherein the chemotherapeutic agent is cisplatin.
8. The method of claim 1 wherein the reovirus is a mammalian reovirus.

9. The method of claim 8 wherein the mammalian reovirus is a human reovirus.
10. The method of claim 9 wherein the human reovirus is a serotype 3 reovirus.
11. The method of claim 10 wherein the serotype 3 reovirus is a Dearing strain reovirus.
12. A method of treating a subject harboring a proliferative disorder wherein said subject comprises neoplastic cells that are refractory to a chemotherapeutic agent, comprising:
- (a) administering to the subject an effective amount of reovirus under conditions that result in infection of the neoplastic cells by the reovirus; and
 - (b) administering an effective amount of the chemotherapeutic agent to said subject.
13. The method of claim 12 wherein the reovirus is administered prior to the administration of the chemotherapeutic agent.
14. The method of claim 12 wherein the reovirus and the chemotherapeutic agent are concurrently administered.
15. The method of claim 12 wherein the reovirus is administered in multiple doses.
16. The method of claim 12 wherein the reovirus is administered in multiple doses prior to administration of the chemotherapeutic agent.
17. The method of claim 12 wherein the subject is a mammal.

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18. The method of claim 12 wherein the mammal is selected from the group selected from the group consisting of dogs, cats, sheep, goats, cattle, horses, pigs, humans and non-human primates.
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19. The method of claim 12 wherein the proliferative disorder is a solid tumor.
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20. The method of claim 19 wherein the solid tumor is selected from the group consisting of lung cancer, prostate cancer, colorectal cancer, thyroid cancer, renal cancer, adrenal cancer, liver cancer, pancreatic cancer, breast cancer and central and peripheral nervous system cancer.
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21. The method of claim 19 wherein the reovirus is administered into or near the solid tumor.
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22. The method of claim 12 wherein the reovirus is administered systematically.
23. The method of claim 12 wherein the proliferative disorder is a hematopoietic tumor.
24. The method of claim 23 wherein the hematopoietic tumor is selected from the group consisting of lymphomas and leukemias.
25. The method of claim 12 wherein the proliferative disorder is a metastatic tumor.
26. A method for preventing a neoplasm in a subject from developing drug resistance to a chemotherapeutic agent, comprising:
- (a) administering to the subject an effective amount of reovirus under conditions which result in infection of the neoplasm by the reovirus; and

- (b) administering to the subject an effective amount of a chemotherapeutic agent.

27. The method of claim 26 wherein the reovirus is administered prior to administration of the chemotherapeutic agent.
28. The method of claim 26 wherein the reovirus and the chemotherapeutic agent are administered concurrently.
29. The method of claim 26 wherein the chemotherapeutic agent is cisplatin.
30. The method of claim 26 wherein the reovirus administration prevents the neoplasm from developing drug resistance to a second chemotherapeutic agent.
31. A method of sensitizing a neoplastic cell to a chemotherapeutic agent, comprising:
- (a) administering to said neoplastic cell an effective amount of a virus, said virus being capable of selectively infecting neoplastic cells; and
 - (b) administering an effective amount of the chemotherapeutic agent to said cell.
32. The method of claim 31 wherein the virus is selected from the group consisting of modified adenovirus, modified HSV, modified vaccinia virus, modified parapoxvirus orf virus, delNS1 virus, p53-expressing viruses, ONYX-015, Delta24, and vesicular stomatitis virus.
33. A method of treating a subject with a chemotherapeutic agent wherein said subject harbors a proliferative disorder and neoplastic cells, comprising:

- (a) administering to the subject an effective amount of a virus under conditions that result in infection of the neoplastic cells by the virus; and
- (b) administering an effective amount of the chemotherapeutic agent to said subject.

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34. The method of claim 33 wherein the virus is selected from the group consisting of modified adenovirus, modified HSV, modified vaccinia virus, modified parapoxvirus orf virus, delNS1 virus, p53-expressing viruses, ONYX-015, Delta24, and vesicular stomatitis virus.

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